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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/851,465	05/05/1997	EDGAR C. ROBINSON	INT21246	5986

7590 04/23/2002

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EXAMINER

COCKS, JOSIAH C

ART UNIT	PAPER NUMBER
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3743

DATE MAILED: 04/23/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

08/851,465

Applicant(s)

ROBINSON ET AL.

Examiner

Josiah C. Cocks

Art Unit

3743

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on response filed 2/4/02.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Response to Amendment*

1. Receipt of applicant's response filed 2/4/02 is acknowledged.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Nutten et al.* (US # 3,428,406) (hereinafter "*Nutten*") in view of *Willms et al.* (US # 5,842,854) (hereinafter "*Willms*").

*Nutten* discloses in Figures 1-32 a liquid fuel burner assembly comprising an air aspirated nozzle (40), a compressor to provide air under positive pressure to the air aspirated nozzle, a zero pressure regulator (60), a fuel supply tank to supply fuel at ambient pressure to the air aspirated nozzle, the fuel entering the nozzle under negative pressure created by air entering the air aspirated nozzle under positive pressure, a manual isolation valve (58), a fuel control valve (110) configured to control liquid fuel supplied to the burner nozzle based on the air flow to the nozzle such that fuel flow is halted on the event of failure of the air flow, and pressure actuated arrangements for controlling flow of liquid fuel to the burner (see col. 9, lines 14-34).

*Nutten* possibly does not disclose a manual metering valve interposed between the liquid fuel supply and air aspirated nozzle which is adjustable during operation of the burner assembly or that the burner is an infrared burner.

In regard to the limitation that the burner is an infrared burner, this limitation is considered merely a statement of intended use, adding no structural limitations to the claims, and has not been given any patentable weight. Further, the burner of *Nutten* would be capable of functioning as an infrared burner.

*Willms* teaches an infrared burner system having a metering element (90) for both air and fluid fuel. This metering element (90) is described as being selectively adjustable by means of rotating screw (200) which serves to function as the equivalent of a valve in varying the size of metering apertures (see col. 9, lines 6-46) to manually control the amount of air and fuel supplied to a combustion zone in order to selectively control the firing rate during operation (see col. 8, lines 10-26) and the thermal output of the burner (see col. 7, lines 28-32). While *Willms* describes in detail the manual mechanism by which the air flow may be metered, the reference incorporates using the same manual mechanism in adjustably metering the fuel flow by means of altering a flow aperture in the choke plate (94) through which a fluid fuel is passing (see col. 9, lines 48-50).

Therefore, in regard to claims 1-8, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the fuel control valve of *Nutten* to incorporate the metering mechanisms of *Willms* for the desirable purpose of preventing an unbalanced ratio of fuel and air in the burner which results in less efficient combustion (see *Willms*, col. 3, lines 27-30) and is a safety hazard (see *Nutten*, col. 9, lines 28-34).

4. Alternatively, claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Nutten et al.* (US # 3,428,406) (hereinafter "*Nutten*") in view of *Reichhelm* (US # 3,361,183).

*Nutten* discloses in Figures 1-32 a liquid fuel burner assembly comprising an air aspirated nozzle (40), a compressor to provide air under positive pressure to the air aspirated nozzle, a zero pressure regulator (60), a fuel supply tank to supply fuel at ambient pressure to the air aspirated nozzle, the fuel entering the nozzle under negative pressure created by air entering the air aspirated nozzle under positive pressure, a manual isolation valve (58), a fuel control valve (110) configured to control liquid fuel supplied to the burner nozzle based on the air flow to the nozzle such that fuel flow is halted in the event of failure of the air flow, and pressure actuated arrangements for controlling flow of liquid fuel to the burner (see col. 9, lines 14-34).

*Nutten* possibly does not disclose a manual metering valve interposed between the liquid fuel supply and air aspirated nozzle which is adjustable during operation of the burner assembly or that the burner is an infrared burner.

In regard to the limitation that the burner is an infrared burner, this limitation is considered merely a statement of intended use, adding no structural limitations to the claims, and has not been given any patentable weight. Further, the burner of *Nutten* would be capable of functioning as an infrared burner.

*Reichhelm* teaches a liquid fuel burner having manual air control (34) and liquid fuel control (22) valves, wherein during operation of the burner these valves are arranged to control/meter the fuel flow and the air flow in accordance with desired flame settings (see col. 6, lines 1-4).

Therefore, in regard to claims 1-8, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the fuel control valve of *Nutten* to incorporate the metering/controlling mechanisms of *Reichhelm* for the desirable purpose of controlling air and fuel ratio such that desired characteristics of burner performance may be achieved (see *Reichhelm*, col. 5, lines 54-57) and a safety hazard may be prevented from occurring (see *Nutten*, col. 9, lines 28-34).

### ***Response to Arguments***

5. Applicant's arguments with respect to claims 1-8 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. *Bennett* is included to further show the state of the art concerning an infrared liquid fuel burner having a control valve (23"). *Reichhelm et al.* (US # 3,705,784) is included further show the state of the art concerning a liquid fuel burner incorporating a metering valve (27). German patent DE 32 29 792 is included to further show the state of the art concerning a manually controlled liquid fuel valve.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Josiah Cocks whose telephone number is (703) 305-0450. The examiner can normally be reached on weekdays from 7:30 AM to 5:00 PM.

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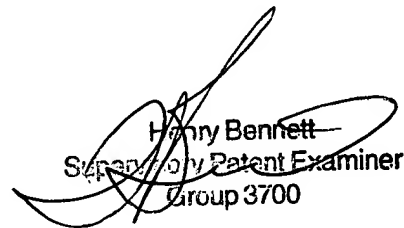
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry Bennett, can be reached at (703) 308-0101. The fax phone numbers for this Group are (703) 308-7764 for regular communications and (703) 305-3463 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0861.

jcc



April 19, 2002



Henry Bennett  
Supervisory Patent Examiner  
Group 3700